Imagineering the U.S. Public Debt: How Changing Perceptions of the Debt altered the Mechanics of Treasury Debt Management in the 1860s and 1960s

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The term "imagineering" first gained currency in the 1960s when Walt Disney used it as a way to describe the design process for creating the animatronic displays at the new Disneyland in Anaheim, California. It was the way of making real an imagined reality.[1]

About the same time, the Department of the Treasury was changing the way it managed the public debt. For almost two hundred years, it had conducted debt operations using bits of paper in the form of securities. But, in the 1960s, the Treasury began following the Federal Reserve's movement to electronic book-keeping and securities; and by the end of the decade, the era of paper notes and bonds was quickly ebbing away. Such dramatic change in the Treasury's debt management was a rare occurrence. Nothing of the same magnitude had happened since the 1860s. Then, in the heat and chaos of the Civil War, the Treasury had abandoned the age-old tradition of having private printers make U.S. Government securities and went into the printing business itself, creating the Bureau of Engraving and Printing.

So, why did the Treasury make these momentous changes and what does debt management have in common with animatronics? It appears that changes in Treasury debt management in the 1860s and 1960s stemmed from changes in perceptions of the nature of the U.S. public debt. And, in adopting a new mechanics of debt management, the Treasury strove to make real what was widely imagined.

THE BUREAU OF ENGRAVING AND PRINTING

In the years before the Civil War, stretching back to colonial days, Government securities were printed only by private printers. There were no official facilities for producing securities. But, in the early years of the Civil War, all this changed. The Treasury began printing its own securities, and by the end of 1864, had printed millions of securities and currency worth over $1.6 billion.[2] In a little over three years, around 100 years of tradition were overthrown with the United States Government establishing a monopoly on Government currency and security production. In an age of laissez-faire, private bank note companies were cast aside and the Treasury entered the printing business. What happened? Briefly, the old system of privately-based Government debt financing collapsed during the early years of the Civil War and was replaced with a publicly-based system in which the public debt was reconceived as a

[1] This paper was produced while the author was historical consultant to the Bureau of Engraving and Printing, Washington, DC. The views, conclusions, and opinions stated in this paper are those of the author and not necessarily those of the Bureau of Engraving and Printing. The author also bears all responsibility for the accuracy of all dates, numbers, calculations, citations, names, and other salient facts. Earlier versions of this paper were presented at the 33rd Annual Meeting of the History of Economics Society in 2006 and the 32nd Annual Meeting of the Social Science History Association in 2007.

[2] "Report to the Secretary of the Treasury from the First Division of the National Currency Bureau," 55. Hereafter cited as NCB report.

source of profit to individual citizens. The mechanics of this new system were embodied in the Bureau of Engraving and Printing. To explain this we need to examine the mechanics of debt financing during the early Civil War.

Around a month after the Union defeat at First Manassas or Bull Run, Secretary of the Treasury Salmon P. Chase did what Treasury Secretaries had done since Hamilton held the office, picked up his hat and coat and went to negotiate a loan from the big northeastern banks.[3] In the middle of August 1861, after a week of cajoling and veiled threats, Chase got the bankers to agree to a "plan for assisting the United States government."[4] It was a $150 million loan (in three installments of $50 million in gold) given in exchange for the like amount in three-year Treasury notes paying 7.30% (also known as Seven-Thirties) that they could later sell to clients above par.[5] Until the first $50 million in gold arrived in the Treasury, Chase planned to issue $50 million in Demand Notes, non-interest-bearing notes payable upon demand in gold at any Treasury office. Issuing Treasury notes and Demand Notes sounds simple enough until one considers what was actually involved in producing and processing the millions of pieces of paper needed to fulfill these plans.

In the comparatively sleepy days before the Civil War, the Treasury followed a time-consuming procedure for issuing securities. First, it contracted with one of the New York bank note companies to produce the 25,000 or so securities it needed for its average issue before the war of $10 million.[6] Finished securities would begin arriving in Washington in around a month with the total printing job taking around six to eight weeks to complete. The securities were printed anywhere from one to four per sheet; and upon reaching the Treasury, the sheets were bound in a book. Then whenever a security was sold, a clerk in the Register's office would perform the proper record keeping and, taking a pair of scissors, cut the security out of the book. The security would then pass to the Register for his signature. Next, it went to the Treasurer's office. Here more record keeping would occur and the Treasurer would sign the security. The duly signed security would then pass to the Secretary's office, which might record further information, and pass it along to the sealing room. Here a clerk would emboss the Treasury seal on the security, marking its authenticity. The security was then ready for issue.

Chase's Seven-Thirties were issued by this method. Though, with around 210,000 securities to be issued, it was a bit of a strain on Treasury personnel.[7] It helped that they were being sold *en bloc*, eliminating the need to record all that individual ownership information and that the authorizing legislation for the issue allowed the Treasury to skip

[3] Sloan, 210; Kagin, 69, 74, 76.
[4] Mitchell, 23.
[5] Hammond, 73-87; *Annual Report of the Secretary of the Treasury on the State of the Finances, 1861*, 9. Hereafter cited as *Annual Report.*
[6] $10 million is the average issuance between 1845 and 1860. Production figures are based on dollar amount of securities issued, using a linear regression of quarterly dollar amounts issued against production for the period of July 4, 1862 to October 1, 1864. Dollar amounts issued were taken from Bayley, 180-3, and quarterly production figures from Noll, "The Production of Treasury Securities."
[7] Hessler, 215-9.

the step of applying the seal. Luckily, the embossing of the Treasury seal was also eliminated in the case of the Demand Notes as an issue of $50 million was equivalent to around 4 million pieces of currency.[8]

By the end of August 1861, sheets of Demand Notes were arriving in Washington from the New York printer. The currency was delivered in uncut sheets containing four notes. However, since no records of ownership had to be kept, these sheets were not bound in books. At first, traditional methods of processing Treasury securities were followed with each note cut from a sheet by hand by clerks with scissors and signed by Treasury officials using pen and ink. But as the enormity of the job ahead began to dawn upon the denizens of the Treasury, it was quickly decided that clerks could be authorized to sign notes in place of Treasury officials. Soon there were as many as 70 clerks signing notes with each expected to sign 3,000 notes a day and ever more women were hired to cut and trim the notes.[9] Throughout the autumn and winter of 1861, the clerks worked feverishly, waiting for the Union victory.

By early 1862, it was clear to everyone that the war was going to prove longer and costlier than first anticipated. With the Treasury facing bankruptcy and the bankers apparently unwilling to help,[10] Congress authorized an additional, emergency issue of $10 million in Demand Notes and the issue of $150 million in a new fiat currency later known as the Greenback.[11] How were the clerks in the Treasury supposed to accomplish all this work? Already struggling to get the 4 million Demand Notes out the door, they now had an extra 400,000-500,000 more to deal with plus a towering mountain of Greenbacks—an added 21 million pieces of currency.[12]

The legislation authorizing the Greenbacks recognized some of the problems. The Treasury was allowed to have the signatures printed on the currency notes,[13] eliminating the need for a new army of clerks to do all that signing. And, instead of embossing the Treasury seal on each note, Congress directed the Treasury to print it on. Probably for the first time printing presses were brought inside the Treasury. The mechanics of Treasury security issuance were changing.

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[8] In total $60,030,000 in Demand Notes were issued using 7,273,000 notes. Assuming that the distribution of $5, $10, and $20 denominations remained constant over time, $50,000,000 worth of Demand Notes would require 3.6 million notes. Total numbers from Vol. 1: Record of daily receipts of notes by denomination, Entry 291-X, RG 50, Records of the Treasurer of the United States, National Archives at College Park.

[9] Scalia, "Demand Notes," 5.

[10] Richardson, 46-7; Redlich, 85-95.

[11] Mitchell, 47; Bayley, 153, 156.

[12] Greenbacks were issued in nine denominations, ranging from $1 to $1,000. The number of Greenbacks needed to be produced was derived from cumulative processing figures for 1863 and 1864 stated in dollar amounts. The ratio of dollars to item was 7.7782. Applying this ratio to $150 million resulted in 19,284,667 items. Adding in $10 million in Demand Notes, gives a total of 20,496,834 items. Total numbers from Entry 291-V: Record of Legal Tender Notes Issued, 1862-1884, RG 50, Records of the Treasurer of the United States, National Archives at College Park.

[13] Scalia, "'I commenced the work," 6.

Directing the change was Spencer Clark, at that time Acting Engineer in Charge of the Bureau of Construction. He oversaw the printing of Treasury seals onto the Greenbacks. Also, by this time, March 1862, Clark had already overcome the currency processing bottleneck of the cutting of notes from their sheets. He mechanized the process with a hand-powered machine that cut and separated the Demand Notes. And, in August he began development of a steam-powered machine for processing the Greenbacks. This was successfully running a month later.[14] So, by the end of 1862, the Treasury had mechanized the processing of printed sheets of securities. All that remained to create a full-fledged Treasury-run bank note company (a Bureau of Engraving and Printing) was the in-house printing of securities. This step came a few months later when problems arose with the Five-Twenty bonds.[15]

The Greenbacks were in part intended to be a stopgap measure to hold the Treasury over until the newly authorized Treasury bonds, the Five-Twenties, could begin generating revenue. To make up a massive shortfall in needed borrowing during fiscal year 1863, the Treasury planned to sell $500 million in Five-Twenty bonds. Sales were initially flat as banks refused to deal in the bonds. As Greenbacks were exchangeable for the bonds at the pleasure of the holder, the price of new Five-Twenties was effectively set at par, eliminating any chance of large-scale speculative purchases.[16] Sales picked up after October 1862 when Chase employed financier Jay Cooke as an agent for the Treasury.[17] Using direct sales techniques and heavy advertising of the profitability of owning bonds, Cooke expected to sell at least a million dollars' worth of bonds a day by bypassing the banks and going straight to the general public.[18] And, in the spring of 1863, sales of Five-Twenties finally began to accelerate. Between the end of March and the end of June, quarterly sales skyrocketed from $7.2 million to $156.5 million.[19] The consequence was that there would be a major increase in the number of bonds that needed to be issued.

Unlike currency, there were no major difficulties in processing the sheets of securities that came in from New York. The Five-Twenties were almost all printed singly (one to a sheet) and did not need a seal applied. All that was needed was for a clerk to perform some minimal bookkeeping and pass it on to the Register's office for an official signature; thousands could be processed in a day. Basically, the bonds could be processed as fast as they were sold. The problem in the issuance of the Five-Twenties was production—getting enough securities printed to meet sales.

From the start, the printing of Five-Twenties lagged well behind demand. Aiming to sell an unprecedented number of securities, the Treasury contracted with the two largest bank note companies in the country—the American Bank Note Company and the National Bank Note Company—to produce the needed 1.25 million Five-Twenty

[14] *Ibid*., 8-11.
[15] So called because the bonds were redeemable by the Government in five years and reached maturity in twenty. They paid 6% interest.
[16] Dewey, 2: 307.
[17] Salmon Chase to Jay Cooke, 23 October 1862, Niven, 299-300; Larson, 118.
[18] Larson, 120.
[19] Bayley, 156.

bonds.[20] To meet these levels of production the bank note companies would need to dedicate around 17 to 26 pressmen working full out, 8 to 12 hours a day, 6 days a week to the printing of Five-Twenties.[21] The bank note companies were unwilling or unable to do this; and within weeks after the start of printing, Secretary Chase was reduced to begging and threatening the companies for greater production.[22] Matters only got worse as Cooke worked to increase sales.

The Government, and thereby Cooke, promised delivery of bonds within four days of purchase; and by the winter of 1862, it was taking the Treasury around 30 days to deliver the purchased bond to the buyer. [23] As the Treasury's representatives, Cooke and his agents took the brunt of the abuse from angry investors who demanded their money back, leaving Cooke with unsold bonds. In turn, Cooke brought pressure to bear on Chase through his brother Henry, a confidant of Chase. In March 1863, Henry Cooke reported to his brother, "I have done all I could, and so has…Chase, to hurry up the printing and forwarding of the bonds….I have shown him how the delay in deliveries checks sales as shown by the falling off in to-day's orders."[24]

By April sales of Five-Twenties were reaching $2.5 million a day.[25] Cooke kept up the pressure on Chase to increase the speed of bond deliveries. At one point during the month, Cooke had $8 million in bond orders awaiting delivery by the Treasury. The growing backlog endangered Government credit and the success of the loan.[26] Cooke's agents working on commission were dismayed at the continuing delays. He reported that at a May 28 meeting with his New York agents, "all the agents [are] disposed to back out & quit the business—the delay of Bonds is ruinous & they say it is getting to be intolerable. It takes all their time to manufacture excuses."[27]

With the big two bank note companies unable to meet current demands, Chase sought to involve more printers in production of the bonds. But to do this, Chase needed the engraved plates used in printing the securities. And since, technically, the plates used to print Government securities were the property of the Government; Chase sought to claim possession of them. Both the American Bank Note and National Bank Note companies refused to give up the plates, calling Chase's proposal surprising, radical, and downright underhanded.[28] Possession of the plates, the bank note companies

[20] This figure was based on Clark's estimate of 250,000 securities per $100 million Five-Twenties. Spencer Clark to Henry Keeney, 12 June 1863. Entry 5: Press Copies of Official and Miscellaneous Letters Sent, vol. 2, Records of the Bureau of Engraving and Printing.
[21] Noll, "The Beginning of Treasury Security Production," 6n13, 8n15.
[22] Tracy Edson to Salmon Chase, 16 April 1862. Folder 1861-1862, Box 2: American Bank Note, Entry 542: Correspondence with bank note companies, Records of the Bureau of the Public Debt. Also see Tracy Edson to Salmon Chase, 12 August 1862, *idem.*
[23] Henry Cooke to Jay Cooke, Oberholtzer, 1: 229.
[24] Henry Cooke to Jay Cooke, *Ibid.*, 1: 230.
[25] Larson, 144.
[26] Oberholtzer, 1: 231; Larson, 144.
[27] Jay Cooke to Henry Cooke, *Ibid.,* and Oberholtzer, 1: 232.
[28] NCB report, 29-31; Fitch Shepard to Salmon Chase, 23 May 1863, Folder 1863-1864, Box 3: National Bank Note, Entry 542: Correspondence with bank note companies, Records of the Bureau of the Public Debt.

argued, ensured future business and this prospective profit was factored in to the cost of the printing run.[29] Given this rebuff, Chase tried the alternative of enlarging the cooperation between American and National by including the newly formed Continental Bank Note Company. However, the older companies refused to promote the business of this newcomer, wanting the status quo to be maintained.

Trying to conduct business as usual on the bank note companies' terms had failed, and it was threatening to wreck the Treasury's plan for financing the war. Desperate, Secretary Chase turned to Clark to take over the printing of the Five-Twenties inside the Treasury and to acquire all new plates from private engravers. It was not until the middle of July 1863 that the plates were ready and Clark began to produce finished Five-Twenty bonds. Using over 40 printers and producing more than 2,500 bonds a day,[30] it took Clark until February 1864 to overcome the massive backlog in unfilled orders created by the bank note companies.[31] The Treasury was now printing and processing its own securities and currency (Fractional Currency at this point), and the Bureau of Engraving and Printing in everything but name was established.

In effect, the creation of the Bureau of Engraving and Printing was a response to problems in the mechanics of Treasury security and currency issuance caused by the demands of war financing. But why did the BEP endure? It was a creation of wartime; and history is full of examples of institutions that arise because of the needs of war. Yet, once the war ends, such wartime creations tend to disappear as their *raison d'etre* is eliminated. But why did not the Bureau of Engraving and Printing disappear with the end of the Civil War? One could argue that the reason was the continued need for the large-scale production of securities: after the Civil War, there were more securities issued and these needed printing. In fact, however, there is a steady decline in security issues after June 1866.[32] And, it is not until the late 1870s that the Bureau of Engraving and Printing becomes seriously involved in currency printing.[33] So, the production argument does not hold. Well, what about currency processing? With the end of 1865 that too begins to decline until 1870.[34] If we talk just in terms of large-scale production, the future looked pretty dim for the Bureau of Engraving and Printing at the end of the war. The Government could have easily gone back to the private printing of Government securities and currency. What then was the cause of the BEP's continued existence? Looking back, we see a significant shift in attitudes toward Government deficit financing and the debt it created, one with which the Bureau of Engraving and Printing was intricately linked.

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[29] Report of the Joint Select Committee on Retrenchment, 186, 207.

[30] Spencer Clark to Salmon Chase, 28 November 1863, Entry 5: Press Copies of Official and Miscellaneous Letters Sent, vol. 2, Records of the Bureau of Engraving and Printing.

[31] Spencer Clark to Salmon Chase, 4 February 1864, Folder 1, Box 1, Entry 602: Correspondence relating to the Bureau of Engraving and Printing, Records of the Bureau of the Public Debt; Spencer Clark to Salmon Chase, 15 February 1864, *idem*.

[32] Noll, "The United States Public Debt, 1861 to 1975." See figure 9.

[33] Historical Resource Center, 11.

[34] The decline in processing is evident from a quick glance at the total money in circulation. *Annual Report, 1928*, 554-55.

This shift is from the prewar system of "private" Government debt financing to a system of "public" Government debt financing. Under the old system, contracting the Government's debt was predominantly a private matter between the Secretary of the Treasury and the large banks of the northeast. Men would meet together in closed rooms and hammer out deals between the Government and interested businessmen. It was a world of big dollar figures and the movement of gold in guarded wagons. And, the securities issued to banks as security or for resale were privately printed. After 1863, Federal financing was a matter for the public. Poorly paraphrasing Lincoln, a government by the people printed securities for sale to the people. Government loans were marketed directly to average citizens who had Government currency in their pockets. And, it was only proper that the securities be produced by a public printer.

Why did the shift from private to public occur? It appears to be a combination of factors. One was an inability or unwillingness of banks to mobilize the wealth of the country. Along with this failure of private financial institutions was that of the private printers and other companies that had practiced wartime price gauging. The bank note companies refused to risk losing their monopoly and high profits even in the face of a collapse of Union finances. There was also a growth of popular distrust and Republican dislike of banks. The result of all this was the democratization or even Republicanization of Government borrowing.[35] From this time forward, the exploitation of the public debt for private profit was demonized while the exploitation of the public debt for the profit of "the people" was heralded as a celebration of patriotism, optimism, democracy, and thrift—basically all that was good in America. In this brave new world, bankers took a back seat when securities were issued and private, profit-driven bank note companies had no place.

So, the rise of the Bureau of Engraving and Printing points to a time of transition, occurring between the years 1861 and 1863. At this time the system of Government borrowing shifted to a new foundation, from private to public, one in which it was the Government's task to make sure "the people" profited from Government debt—not bankers or bank note companies. And, while reality may not wholly coincide with this ideal,[36] Government borrowing still rests upon this foundation. Thus we still have public offerings of Government securities and a Bureau of Engraving and Printing.

BOOK-ENTRY PROCEDURE

Nothing makes more sense nowadays than to conduct debt management operations electronically through book-entry procedures. But, is it necessary? Paper securities and physical transfers worked well for hundreds of years. The shift from paper to electronic securities was a difficult and expensive process. What drove the Treasury to make this change in the 1960s was not expectant cost savings but the Federal Reserve's need for speed in transactions. This change in the mechanics of the Treasury debt management stemmed from a new conception of the public debt as a public good rather than a necessary evil.

[35] Richardson, chapts. 2-3; Lawson, chapt. 2.

[36] Certainly, by the 1890s, the Government was again doing behind-the-scenes deals with the big New York banks. See Noyes, 573-602.

Here again we must examine the mechanics of Treasury debt management to explain what happened. By the 1950s, Treasury procedures for issuing securities were certainly more efficient and faster than during the Civil War. Yet, the Bureau of the Public Debt, using over 40 seal presses, was still embossing every security, except Savings Bonds, with the Treasury seal.[37] And, instead of a signature, each security bore the personal initials of a recording Treasury or Federal Reserve Bank clerk. This finally changed in August 1952, when the Treasury ended these practices.[38] While the bookkeeping costs of issuance may have been minimized, there were still the costs of printing and redeeming securities.

The Treasury securities issued in the early 1950s were mostly marketable securities with coupons attached. The owner of the security received his semiannual interest payments on his investment by turning in a coupon to the Treasury. The bearer of the security would detach the appropriate coupon and present it to the Treasury for payment through the banking system. The holder of the security would turn the coupon in to his bank which would then send it on to the regional Federal Reserve bank. Acting as the Treasury's fiscal agent, the Federal Reserve bank would issue a payment, physically cancel the coupon, and send on the coupon to the Treasury's transfer agent, the Bureau of the Public Debt. This bureau then recorded the payment and destroyed the coupon. The process would be completed for each of the coupons of each individual security. Pretty much the same procedure was followed when the security matured and the body of the note or bond was sent in to claim payment of the principal.

Investors buying millions of dollars in securities or a custodial bank holding billions of dollars in bonds or notes for their customers also had a lot of work to do when they wanted to cash in coupons every year. As interest was paid semiannually, every year two coupons had to be detached from every individual security and turned in for payment. If an investor had $500 million in Treasury notes, and hopefully held the sum in $1 million denomination securities, he would have to detach and turn in 1,000 coupons a year. Custodial banks handling larger sums and many smaller denominations had an even worse time.[39] People had to be employed to cut, count, track, file, transport, and guard the coupons. Vault space was needed to store all these securities. And, between 1952 and 1955, the number of securities, especially notes, and coupons involved was to expand dramatically. The resulting increase in costs was burdensome.

An easy way to reduce the administrative costs involved would be to add a few zeros onto the existing denominations of the most popular securities, and this is what was done in the case of Treasury notes and certificates of indebtedness. In the mid-1950s, the maximum denomination of these securities was raised from $1 million to $500

[37] Robert L. Skinner to A.E. Weatherbee, 13 December 1966. Folder: History of the Seal, U.S.T.D., New Seal of 1968, Box 24: Records of the Office of the Chief Clerk, Entry 679J: History of the Seal of the U.S. Treasury Department, 1778-1968, Records of the Department of the Treasury.
[38] PD Bulletin No. 17, 29 August 1952, Public Debt Central Files, Series OA.
[39] Garbade, "G-20 Case Study," 33.

million. This cut down the amount of work involved in large issues of Treasury notes and certificates for everyone. The $500 million investor now had only two coupons to worry about, as did the Bureau of the Public Debt. And, the Bureau of Engraving and Printing only had to print one $500 million security instead of 500 $1 million securities. So, very-high-denomination notes and certificates were really money saving devices.

Whatever the cost saving, it was not enough. While very-high denominations saved on the costs of handling coupons and printing securities, they could not eliminate these costs or the costs of safe-keeping and transferring bearer securities. And, transfer costs were rising. The transfer of a security even between two New York City banks was no easy or inexpensive matter. It involved clerks, messengers, counters, and hours of work:

> The process started when a seller ordered its custodial bank to deliver securities from the seller's account (literally taking engraved certificates out of a file), verified the count, and packaged securities for delivery. A messenger, possibly armed but usually not…, carried the securities to the buyer's bank, handed them over at a delivery window, and received a receipt and possibly a check for payment….The buyer's bank counted the securities, verified the count, and finally added the securities to the buyer's account (literally placing certificates in a file assigned to the buyer).[40]

All this movement of paper certificates and their filing and refiling, increased the chances of them being lost or stolen. And, the costs of handling bearer securities were rising as the number of bearer securities rose.[41] The losses from theft were also rising. While the losses of Treasury securities due to theft amounted to less than $4 million in 1966, $6 million in 1967, and $6.5 million in 1968, they skyrocketed to over $30 million in 1969.[42] By late 1970, insurance companies were refusing to cover holders of Treasury securities against loss, threatening the functioning of the Government securities market.

These transfer problems were overcome by the Federal Reserve's development of book-entry procedures, replacing paper securities with virtual, electronic ones. Since the early 1960s, the Fed was investigating whether the securities held by member banks and Federal Reserve banks could be held in book-entry form.[43] In 1968, a system was introduced allowing Federal Reserve banks to hold book-entry securities; and, in January 1970, all bearer securities held in the Federal Reserve's System Open Market Account became book-entry securities.[44] With this development, 40% of all outstanding marketable debt was in book-entry form. It was at this point that the Treasury stopped offering very-high-denomination Treasury notes and certificates of

[40] *Ibid*., 35.
[41] Hillery and Thompson, 255.
[42] Testimony of John Carlock, 153, Public Debt Central Files, OA-155.
[43] Garbade, "G-20 Case Study," 44-45.
[44] *Ibid*., 48-9.

indebtedness. They were no longer necessary. Over the next 30 years, all paper securities would be phased out.

Yet, in the 1960s, the transition from paper to computer screen was not a foregone conclusion. Other methods could have been found to control costs and help the market function smoothly: $1 billion securities, Government insurance of bearer securities, elimination of coupons or just annual interest payments, securities in the form of punch cards, etc. And, automated bookkeeping does not infer the elimination of definitive securities. Both existed side-by-side for many years at the Bureau of the Public Debt, at least since World War II. Why make such a dramatic change from traditional, paper securities to electronic, virtual securities, overturning 200 years of financial experience and legal precedent?[45] The argument made since the late 1960s was that book-entry was introduced because it was a cost saving innovation—was it?

Book-entry was promoted and developed by the Federal Reserve banks. From mid-1963, the banks had studied how to apply electronic methods to definitive transferable Treasury securities.[46] In terms of costs, the Bureau of the Public Debt did not foresee great savings with the advent of book-entry, only complications. Instead of one form of security, it now had to deal with two: definitive and electronic. Some investors would want one form, some another, and still other investors would want to change from one to another and maybe back again.[47] New methods and procedures would have to be developed and new computers bought. Whatever savings there were in handling costs would be offset by higher accounting costs.[48] No doubt the Federal Reserve banks would face much the same cost/benefit tradeoff. True, fewer securities would need to be printed. But, for the Bureau of Engraving and Printing whose *raison d'etre* was the printing of securities, was this a good thing? In any case, it stayed in the business of printing definitive securities until 1986, almost 20 years after the introduction of book-entry. So, if cost savings were problematic and would not manifest themselves until well into the future,[49] why would the Fed argue for the change as early as 1963?

It was not because there was anything seriously wrong with the Treasury's existing system of handling its securities. In the early 1960s, the Treasury was happy with the established way of dealing with Treasury securities, the very-high-denomination securities had helped keep costs down and the growth in outstanding marketable debt was leveling off. (The massive expansion in marketable securities—primarily Treasury

[45] Garbade, Presentation at the Bureau of the Public Debt.
[46] *Annual Report, 1968*, 93; Garbade, "Origins of the Federal Reserve Book-Entry System," 39n19; "Establishment of Book-Entry Procedure for the Issuance of Government Securities," January 2, 1968, Public Debt Central Files, OA-155.
[47] *Annual Report, 1969*, 96.
[48] *Annual Report, 1967*, 88.
[49] "Establishment of Book-Entry Procedure for the Issuance of Government Securities," January 2, 1968, Public Debt Central Files, OA-155; Memorandum from G.B. Winston to H.J. Hintgen, July 12, 1967, *idem*. Significant cost savings did not materialize until the 1980s. See "An Analysis of Full Book Entry for Treasury Notes and Bonds, Part I: The Elimination of Bearer Securities," August 1982, Public Debt Central Files, OA-155; "An Analysis of Full Book Entry for Treasury Notes and Bonds, Part II: The Replacement of Registered Securities," April 1983, *idem*.

notes and bills—with the accompanying explosion in costs and insurance difficulties would not start until 1967/1968.) There were no impending crises, and the public debt's growth was almost stagnant. The Treasury's system of debt management as revamped in the 1950s with all its paper securities ran efficiently and faced no foreseeable challenges. So, the cause for the drive for book-entry must lie within the Fed itself—something changed for the Fed in the early 1960s.

Since the 1951 accord with the Treasury, wherein it had declared its independence from Treasury control, the Fed sought to avoid entanglements with the Treasury's public debt management.[50] In part, its "bills only" policy, begun in 1953, was an attempt to maintain its freedom from Treasury influence by limiting as far as possible its connection with the public debt when conducting monetary policy.[51] The Fed argued that, traditionally, central banks limited themselves to self-liquidating commercial paper and that Treasury bills were a necessary substitute for these ideal securities.[52] Holding true to this belief, the Federal Reserve purchased couponed securities only twice between 1953 and 1961.[53] The Fed's concern was monetary stability, not the structure of interest rates in the secondary bond market.[54]

This all changed in the early 1960s. The period 1961 to 1963 saw some significant changes for the Federal Open Market Committee (FOMC) and its System Open Market Account. In 1961, the FOMC abandoned its "bills only" policy, repeatedly entering the market for Treasury notes and bonds to participate in the Treasury's "Operation Twist," which was an attempt to change the yield curve by manipulating the markets in public debt securities.[55] As part of this operation, between 1961 and 1963, the System Open Market Account grew at an annual average rate of 7.5%, up from the 2.8% rate of the previous 10 years.[56] The Fed was trying to adjust a balance of payments problem while restoring high employment following a recession occurring early in the Kennedy administration. In effect, the Fed abandoned a policy and approach to the Treasury and the public debt that was almost a decade old.[57] It now had a large stake in the public debt and how it was managed.[58] More than ever, the management of the public debt became tied to the management of the money supply and economic policy. And, the Fed found that the Treasury's traditional paper-based methods just were not adequate anymore. In this new frontier, sitting on top of securities and processing coupon payments were not the most important functions, instead buying and selling—transferring—securities were of the greatest importance.

But, moving bits of paper around by hand was a slow, clumsy way of conducting transfers. It was also a risky way of doing business. In the middle of 1962, just when

[50] Friedman and Schwartz, 613.
[51] *Ibid*., 633-4; Fand and Scott, 16.
[52] Meulendyke, 35.
[53] *Ibid.*
[54] Fand and Scott, 16.
[55] Meulendyke, 38-9; Friedman and Schwartz, 636.
[56] Derived from Meulendyke, Table 2, 40.
[57] Wood, 5.
[58] Zaretsky, 4-5; Konstas, 104.

the Fed was trying to get a handle on its new role in debt management, the Federal Reserve Bank of San Francisco lost $7.5 million in bearer Treasury securities while the Reserve Bank of Richmond lost $100,000.[59] This was the event that triggered the search for a quicker and, most of all, safer way to buy and sell securities.[60] That search ended with the idea of book-entry. Yet, the pursuit of book-entry in the early 1960s points towards a deeper change, the cause of the Fed's change in direction, its abandonment of a "bills only" policy. The Fed's actions mark a change in perception of the public debt by the Government and society in general; they mark a passing of traditional ways of thinking about the debt.

Before, during, and for some time after World War II, the debt was usually viewed as a transient evil.[61] It was something that needed to be reduced, to have an end. Paying down the debt was long a political imperative. Using traditional systems to manage the debt was fine as it was always considered to be on its way out, always being reduced, resulting in ever less work. The theoretical aim of the traditional debt management system was to put itself out of business. But during the late 1950s and early 1960s, Keynesianism or the "New Economics" came to dominate thinking in Government finance and the public debt.[62] In the 1960s, increased domestic spending, expansive monetary policy, and tax cuts, especially the heralded tax cut of 1964, were pursued not only to improve society but also to move the economy toward full employment. Deficits, Treasury debt issues, and, therefore, the public debt were now central to economic success. The public debt was no longer a transient evil to be managed out of existence by the Treasury but a permanent benevolence to be nurtured for the public good to a large degree by the central bank.

In the end, the use of electronic book-entry in public debt management was the manifestation of a sharp change in attitudes towards the public debt. A change in the way of viewing the debt that burgeons in the Kennedy administration leads the Federal Reserve to become more closely involved in public debt management. It finds traditional methods, conducted by the Treasury and epitomized by very-high-denomination Treasury securities, to be inadequate for the new world of a permanent public debt and begins to develop electronic, book-entry procedures. Paperless debt management replaces the traditional one as the size of the marketable debt rapidly expands and an insurance crisis appears.

CONCLUSION

In the 1860s and 1960s dramatic changes occurred in the mechanics of Treasury debt management. In both instances the changes were not foregone conclusions. After the Civil War, the Treasury did not need its own printing establishment anymore, but it kept the Bureau of Engraving and Printing. And, in the 1960s, the Treasury did not have to

[59] Memorandum to the Secretary from John K. Carlock, July 25, 1967, Public Debt Central Files, OA-155.
[60] Garbade, "Origins of the Federal Reserve Book-Entry System," 39n20; Memorandum from Winston to Hintgen, July 12, 1967, Public Debt Central Files, OA-155.
[61] Withers, 30, 35-46, 69-70; Harris, 51-72, 259-60.
[62] Stein, 375, 379, 392, 401-02, 413, 459; Tobin, 6-7.

adopt the Fed's book-entry procedures to make debt management more efficient, yet it took this radical and expensive step anyway.

The decisions only make sense when we consider changes in popular perceptions of the public debt. In the 1860s, the public debt was recast in the popular mind as a source of profit for the average American investor. It was no longer a matter of negotiations between Treasury officials and bankers but a public institution free of private influence. Such a system logically called for a public printer, the Bureau of Engraving and Printing.

A hundred years later, in the 1960s, the public debt ceased to be viewed as a transitory evil and came to be seen as a permanent good. It was something that had to be managed to promote employment and economic growth. Now, it was not enough to sit on securities and collect the interest. Instead, securities had to be constantly bought and sold by the Federal Reserve. This called for the speed and security only achievable through electronic book-entry.

In the end, these changes in the mechanics of public debt management show us that they were not the result of the inevitable march of time but the shaping of ideas into reality.

REFERENCES

Annual Report of the Secretary of the Treasury on the State of the Finances. Washington, DC: Government Printing Office, 1861-1970.

Bayley, Rafael A. *The National Loans of the United States from July 4, 1776, to June 30, 1880*. 2d ed., facs. rpt., 1881. New York: Burt Franklin, 1970.

Dewey, Davis Rich. *Financial History of the United States*. 8th rev. ed., facs. rpt., 1922. Boston: Elibron Classics, 2003.

Fand, David I. and Ira O. Scott, Jr. "The Federal Reserve System's 'Bills Only' Policy: A Suggested Interpretation." *The Journal of Business*, 31, 1 (Jan. 1958): 12-18.

Friedman, Milton and Anna J. Schwartz. *A Monetary History of the United States, 1867-1960*. Princeton: Princeton University Press, 1963.

Garbade, Kenneth D. "G-20 Case Study: United States: Innovation and Structural Change in the U.S. Treasury Securities Market." 2003.

-------. "Origins of the Federal Reserve Book-Entry System." *FRBNY Economic Policy Review.* December 2004: 33-50.

-------. Presentation at the Bureau of the Public Debt, 23 March 2006.

Hammond, Bray. *Sovereignty and an Empty Purse: Banks and Politics in the Civil War.* Princeton: Princeton University Press, 1970.

Harris, Seymour E. *The National Debt and the New Economics*. New York: McGraw-Hill, 1947.

Hessler, Gene. *An Illustrated History of U.S. Loans, 1775-1898.* Port Clinton, OH: BNR Press, 1988.

Hillery, Paula and Stephen Thompson. "The Federal Reserve Banks as Fiscal Agents and Depositories of the United States." *Federal Reserve Bulletin*, vol. 86 (April 2000): 251-59.

Historical Resource Center. *BEP History*. Washington: Bureau of Engraving and Printing, 2004.

Kagin, Donald H. "Monetary Aspects of the Treasury Notes of the War of 1812." *The Journal of Economic History*, 44, 1 (March 1984): 69-88.

Konstas, Panos. "From Bills Only to Operation Twist: A Study of Federal Reserve Open-Market Operations for the Period, 1953-1964." *The Journal of Finance*, 22, 1 (March 1967): 104-105.

Larson, Henrietta M. *Jay Cooke, Private Banker*. Cambridge: Harvard University Press, 1936.

Lawson, Melinda. *Patriot Fires: Forging a New American Nationalism in the Civil War North*. Lawrence: University Press of Kansas, 2002.

Meulendyke, Ann-Marie. *U.S. Monetary Policy and Financial Markets*. New York: Federal Reserve Bank of New York, 1998.

Mitchell, Wesley C. *A History of the Greenbacks*. Chicago: University of Chicago Press, 1903.

Niven, John, ed., *The Salmon P. Chase Papers, Vol. 3: Correspondence, 1858-March 1863*. Kent, OH and London: Kent State University Press, 1996.

Noll, Franklin. "The Beginning of Treasury Security Production at the Bureau of Engraving and Printing, 1863." *Historical Resource Center Occasional Papers.* Washington, DC: Bureau of Engraving and Printing, 2006.

-------. "The Production of Treasury Securities, July 4, 1862 to October 1, 1864: The Reconstruction of BEP Quarterly Production Figures." October 1, 2004, manuscript.

-------. "The United States Public Debt, 1861 to 1975," *EH.Net Encyclopedia*, Robert Whaples, ed. May 26, 2004, URL http://eh.net/encyclopedia/article/noll.publicdebt.

Noyes, Alexander D. “The Treasury Reserve and the Bond Syndicate.” *Political Science Quarterly*, 10, 4 (Dec. 1895): 573-602.

Oberholtzer, Ellis Paxson. *Jay Cooke: Financier of the Civil War*. Philadelphia: George W. Jacobs & Co., 1907.

Public Debt Central Files. OA-155, Book Entry Procedure for Transferable Treasury Bonds, Notes, Certificates of Indebtedness, and Bills, Important Data File, vols. I, II, IV and V.

-------. Series OA (Securities General), OA-719, Seal, 1944-1966.

Records of the Bureau of Engraving and Printing. Record Group 318. National Archives at College Park.

Records of the Bureau of the Public Debt. Record Group 53. National Archives at College Park.

Records of the Treasurer of the United States. Record Group 50. National Archives at College Park.

Records of the Department of the Treasury. Record Group 56. National Archives at College Park.

Redlich, Fritz. *The Molding of American Banking: Men and Ideas, Part II: 1840-1910.* New York: Hafner Publishing Co., 1951.

“Report of the Joint Select Committee on Retrenchment.” Senate Report No. 273, 40th Congress, 3rd session, 3 March 1869.

“Report to the Secretary of the Treasury from the First Division of the National Currency Bureau.” House Ex. Doc. No. 50, 38th Congress, 2nd session, 6 February 1865.

Richardson, Heather Cox. *The Greatest Nation of the Earth: Republican Economic Policies during the Civil War*. Cambridge, MA: Harvard University Press, 1997.

Scalia, Michael. “’I commenced the work…’: Origins of the Bureau of Engraving and Printing.” *Historical Resource Center Occasional Papers.* Washington, DC: Bureau of Engraving and Printing, 2006.

-------. “Demand Notes: The Accidental Currency.” *Historical Resource Center Occasional Papers*. Washington, DC: Bureau of Engraving and Printing, 2006.

Sloan, Herbert E. *Principle and Interest: Thomas Jefferson and the Problem of Debt*. New York: Oxford University Press, 1995.

Stein, Herbert. *The Fiscal Revolution in America: Policy in Pursuit of Reality*. 2d rev. ed. Washington, DC: AEI Press, 1996.

Tobin, James. *The New Economics One Decade Older*. Princeton: Princeton University Press, 1974.

Withers, William. *The Public Debt*. New York: The John Day Co., 1945.

Wood, John H. "William McChesney Martin, Jr.: A Reevaluation." *Region Focus* (Winter 2006): 2-7.

Zaretsky, Adam M. "To Boldly Go Where We Have Gone Before: A Historical Episode about Long-Term Interest Rates Not Worth Repeating." *The Regional Economist* (July 1993): 1-8.